

CLAIMS

What is claimed is:



1. A ball and socket assembly comprising:
a socket component including a pair of sockets and a pair of opposed inclined edges; and
a ball component received in each of said pair of opposing sockets.

2. The assembly as recited in claim 1 wherein said ball component includes a ball and an arm, and said ball is received in said socket to allow for pivotal adjustment of said arm.

3. The assembly as recited in claim 2 wherein said balls are approximately 1.75 inch in diameter and said arms are approximately 1.25 inch in diameter.

4. The assembly as recited in claim 2 wherein said balls are made of a material harder than a material of said sockets.

5. The assembly as recited in claim 4 wherein said sockets are made of aluminum.

6. The assembly as recited in claim 2 wherein said sockets extend over more than one half of a surface area of said balls.

7. The assembly as recited in claim 1 wherein said socket component includes a first socket half and a second socket half secured together to form said pair of sockets.

8. The assembly as recited in claim 7 wherein said clamp halves are secured together by a pair of bolts located substantially between said pair of sockets.

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9. The assembly as recited in claim 7 wherein said clamp halves are secured together by four bolts, one of said bolts being located substantially over one of said sockets, another of said bolts being located substantially under said socket, one of said bolts being located substantially over the other of said sockets, and one of said bolts being located substantially under the other of said sockets.

10. The assembly as recited in claim 7 further including a gap between said clamp halves.

11. The assembly as recited in claim 1 wherein said pair of opposed edges are inclined approximately 75° from a lower surface of said assembly.

12. The assembly as recited in claim 1 wherein said balls are serrated.



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13. A robotic arm comprising:

a ball and socket assembly including a socket component having a first socket half and a second socket half secured together to form a pair of sockets and a pair of opposed inclined edges, and a pair of ball components each having a ball received in one of said sockets and an arm, movement of said ball in said socket allowing for pivotal adjustment of said arm.

14. The robotic arm as recited in claim 13 wherein said balls are approximately 1.75 inch in diameter and said arms are approximately 1.25 inch in diameter.

15. The robotic arm as recited in claim 13 wherein said balls are made of a material harder than a material of said sockets.

16. The robotic arm as recited in claim 13 wherein said clamp halves are secured together by a pair of bolts located substantially between said pair of sockets.

17. The robotic arm as recited in claim 13 wherein said clamp halves are secured together by four bolts, one of said bolts being located substantially over one of said sockets, another of said bolts being located substantially under said socket, one of said bolts being located substantially over the other of said sockets, and one of said bolts being located substantially under the other of said sockets.

18. The robotic arm as recited in claim 13 further including a gap between said clamp halves.

19. The robotic arm as recited in claim 13 wherein said robotic arm includes a plurality of said ball and socket assemblies.

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20. The robotic arm as recited in claim 13 wherein said pair of opposed ends are inclined approximately 75° from a lower surface of said assembly.

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21. The robotic arm as recited in claim 13 wherein said balls are serrated.

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22. A method for supporting an object with a robotic arm comprising the steps of:

- providing a socket component including a pair of sockets and a pair of opposed inclined edges; and
- providing a ball component including an arm and a ball which is received in each of said opposing sockets;
- pivoting said ball in said socket to allow for pivotal adjustment of said arm; and
- locking said ball in said socket.